INDEX TO AUTHORS.

A

Allen, Agnes. See PEARL and ALLEN, 215

Armstrong, Henry E. A chemist's homage to the work of a biologist, 653

B

Borsook, Henry. See MORRELL, BORSOOK, and WASTENEYS, 601

Bridges, Calvin B. The relation of the age of the female to crossing over in the third chromosome of *Drosophila melanogaster*, 689

Brody, Samuel. Time relations of growth. I. Genetic growth constants of animals, 233

C

Chambers, Robert, and **Reznikoff, Paul.** Micrurgical studies in cell physiology. I. The action of the chlorides of Na, K, Ca, and Mg on the protoplasm of *Amœba proteus*, 369

Cohn, Edwin J., and **Prentiss, Adela M.** Studies in the physical chemistry of the proteins. VI. The activity coefficients of the ions in certain oxyhemoglobin solutions, 619

Cole, William H. Geotropism and muscle tension in *Helix*, 253

Crozier, W. J. The orientation of animals by opposed beams of light. I, 671

D

Dernby, Karl Gustav. On the nature of diphtheria toxin, 311

Donnan, F. G. Concerning the applicability of thermodynamics to the phenomena of life, 685

E

East, E. M. The physiology of self-sterility in plants, 403

F

Falk, K. George, Noyes, Helen Miller, and **Sugiura, Kanematsu.** Studies on enzyme action. XXXIII. Lipase actions of extracts of the whole rat at different ages, 75

Fleeson, Elizabeth H. See WINSLOW and FLEESON, 195

Flexner, Simon. Epidemic encephalitis and simple herpes, 713

G

Greenberg, David M., and **Schmidt, Carl L. A.** Studies on the formation and ionization of the compounds of casein with alkali. IV. The transport numbers of the compounds of casein with the alkali earth elements, 271

H

Hardy, W. B. Molecular orientation in living matter, 641

Harvey, E. Newton. The total luminous efficiency of luminous bacteria, 89

Hastings, A. Baird, Salvesen, Harald A., Sendroy, Julius, Jr., and Van Slyke, Donald D. Studies of gas and electrolyte equilibria in the blood. IX. The distribution of electrolytes between transudates and serum, 701

Hawkins, James A. See MURPHY and HAWKINS, 115

Hecht, Selig. The effect of exposure period and temperature on the photosensory process in *Ciona*, 291

Hitchcock, David I. Protein films on collodion membranes, 61

Höber, Rudolf, and Schürmeyer, Albert. Fermentwirkung und Ionenantagonismus, 265

Huddleston, O. L. See MAXWELL and HUDDLESTON, 441

I

Irwin, Marian. On the accumulation of dye in *Nitella*, 147

K

Kobelt, Nina. Bibliography of Jacques Loeb, lxi

Kunitz, M. See NORTHROP and KUNITZ, 317

L

Lasareff, P. Application of the theory of quanta to peripheral vision, 189

Levene, P. A., and Pfaltz, M. H. The action of alkalies on peptides and on ketopiperazines, 183

Lillie, Ralph S. The activation of starfish eggs by acids, 339

Linderstrøm-Lang, K. See SØRENSEN, LINDERSTRØM-LANG, and LUND, 543

Loeb, Leo. Transplantation and potential immortality of mammalian tissues, 417

Loeb, Robert F. The effect of pure protein solutions and of blood serum on the diffusibility of calcium, 451

Lund, Ellen. See SØRENSEN, LINDERSTRØM-LANG, and LUND, 543

Lyon, E. P. A study of the circulation, blood pressure, and respiration of sharks, 279

M

Maxwell, S. S., and Huddleston, O. L. The relations of the individual ampullæ of the semicircular canals to the individual eye muscles. I. The horizontal canals, 441

Meyerhof, O. Recent investigations on the aerobic and anaerobic metabolism of carbohydrates, 531

Michaelis, L. Contribution to the theory of permeability of membranes for electrolytes, 33

Moore, A. R. The photolysis of the luminescent granules of *Eucharis multicornis*, 303

Moore, Mary Mitchell. The reactions of *Cerianthus* to light, 509

Morrell, Clarence A., Borsook, Henry, and Wasteneys, Hardolph. The influence of the backward reaction in the peptic hydrolysis of albumin, 601

Murphy, James B., and Hawkins, James A. Comparative studies on the metabolism of normal and malignant cells, 115

N

Negelein, Erwin. See WARBURG, WIND, and NEGELEIN, 519

Nichols, Emily G. See LOEB, ROBERT F., 451

Northrop, John H., and **Kunitz, M.** The swelling and osmotic pressure of gelatin in salt solutions, 317

Noyes, Helen Miller. See FALK, NOYES, and SUGIURA, 75

O

Osterhout, W. J. V. Is living protoplasm permeable to ions? 131

—. Jacques Loeb (Biographical sketch), ix

P

Parker, G. H. The excretion of carbon dioxide by frog nerve, 21

Parmenter, Charles L. The chromosomes of parthenogenetic frogs and tadpoles, 1

Pearl, Raymond, and **Allen, Agnes.** The influence of alcohol upon the growth of seedlings, 215

Pfaltz, M. H. See LEVENE and PFALTZ, 183

Prentiss, Adela M. See COHN and PRENTISS, 619

R

Reznikoff, Paul. See CHAMBERS and REZNIKOFF, 369

Robertson, T. Brailsford. The analysis of the growth of the normal white mouse into its constituent processes, 463

S

Salvesen, Harald A. See HASTINGS, SALVESEN, SENDROY, and VAN SLYKE, 701

Schmidt, Carl L. A. See GREENBERG and SCHMIDT, 271

Schürmeyer, Albert. See HÖBER and SCHÜRMEYER, 265

Sendroy, Julius, Jr. See HASTINGS, SALVESEN, SENDROY, and VAN SLYKE, 701

Sharpey-Schafer, E. On the respective parts played by neural and humoral influences in animal reactions, 645

Sørensen, S. P. L., Linderstrøm-Lang, K., and **Lund, Ellen.** The influence of salts upon the ionization of egg albumin, 543

Sugiura, Kanematsu. See FALK, NOYES, and SUGIURA, 75

V

Van Slyke, Donald D. See HASTINGS, SALVESEN, SENDROY, and VAN SLYKE, 701

de Vries, Hugo. Androlethal factors in *Œnothera*, 109

W

Warburg, Otto, Wind, Franz, and **Negelein, Erwin.** The metabolism of tumors in the body, 519

Wasteneys, Hardolph. See MORRELL, BORSOOK, and WASTENEYS, 601

Wind, Franz. See WARBURG, WIND, and NEGELEIN, 519

Winslow, C.-E. A., and **Fleeson, Elizabeth H.** The influence of electrolytes upon the electrophoretic migration of bacteria and of yeast cells, 195

INDEX TO SUBJECTS.

A

Acid:
Activation of starfish eggs (LILLIE) 339
Activity:
Coefficients of ions in certain oxyhemoglobin solutions (COHN and PRENTISS) 619
Aerobe:
Metabolism of carbohydrates (MEYERHOF) 531
Age:
Drosophila melanogaster, female, relation to crossing over in third chromosome (BRIDGES) 689
Albumin:
Egg, ionization, influence of salts (SØRENSEN, LINDERSTRØM-LANG, and LUND) 543
Hydrolysis, peptic, influence of backward reaction (MORRELL, BORSOOK, and WASTENEYS) 601
Alcohol:
Seedling growth, influence on, of (PEARL and ALLEN) 215
Alkali:
Casein compounds, formation. IV (GREENBERG and SCHMIDT) 271
— —, ionization. IV (GREENBERG and SCHMIDT) 271
Earth elements, transport numbers of casein compounds with (GREENBERG and SCHMIDT) 271
Alkali—*continued:*
Ketopiperazines, action on, of (LEVENE and PFALTZ) 183
Peptides, action on, of (LEVENE and PFALTZ) 183
Amœba:
proteus, protoplasm, action of chlorides of sodium, potassium, calcium, and magnesium (CHAMBERS and REZNIKOFF) 369
Ampulla:
Semicircular canals, relation to individual eye muscles. I (MAXWELL and HUDDLESTON) 441
Anaerobe:
Metabolism of carbohydrates (MEYERHOF) 531
Androlethal:
Factors in *Œnothera* (DE VRIES) 109
Antagonism:
Ion, and fermentation (HÖBER and SCHÜRMEYER) 265

B

Bacterium:
Electrophoretic migration, influence of electrolytes (WINSLOW and FLEESON) 195
Luminous, total luminous efficiency (HARVEY) 89
Blood:
Gas and electrolyte equilibria. IX (HASTINGS, SALVESEN, SENDROY, and VAN SLYKE) 701

Blood—*continued:*
Serum. *See* Serum.
Blood pressure:
Shark (LYON) 279

C

Calcium:
Diffusibility, effect of pure protein solutions (LOEB) 451
Calcium chloride:
Protoplasm of *Amœba proteus*, action on, of (CHAMBERS and REZNIKOFF) 369
Canal:
Horizontal, individual ampullæ, relation to individual eye muscles (MAXWELL and HUDDLESTON) 441
Semicircular, individual ampullæ, relation to individual eye muscles. I (MAXWELL and HUDDLESTON) 441
Carbohydrate:
Metabolism, aerobic (MEYERHOF) 531
—, anaerobic (MEYERHOF) 531
Carbon dioxide:
Frog nerve, excretion (PARKER) 21
Casein compounds:
Alkali, formation. IV (GREENBERG and SCHMIDT) 271
—, ionization. IV (GREENBERG and SCHMIDT) 271
Transport numbers of compounds with alkali earth elements (GREENBERG and SCHMIDT) 271
Cell:
Malignant, metabolism (MURPHY and HAWKINS) 115
Normal, metabolism (MURPHY and HAWKINS) 115
Cell—*continued:*
Physiology, micrurgical studies. I (CHAMBERS and REZNIKOFF) 369
Yeast, electrophoretic migration, influence of electrolytes (WINSLOW and FLEESON) 195
Cerianthus:
Reaction to light (MOORE) 509
Chemistry:
Physical, of proteins. VI (COHN and PRENTISS) 619
Chromosome:
Drosophila melanogaster, relation of crossing over in third chromosome to age of female (BRIDGES) 689
Parthenogenetic frogs (PARMENTER) 1
— tadpoles (PARMENTER) 1
Ciona:
Photosensory process, effect of exposure period (HECHT) 291
— —, — — temperature (HECHT) 291
Circulation:
Shark (LYON) 279
Collodion:
Membrane, protein films on (HITCHCOCK) 61
Crossing over:
Drosophila melanogaster, in third chromosome, relation to age of female (BRIDGES) 689

D

Diffusibility:
Calcium, effect of blood serum (LOEB) 451
—, — — pure protein solutions (LOEB) 451

Diphtheria:
Toxin, nature (DERNBY) 311
Drosophila:
melanogaster, crossing over in third chromosome, relation to age of female (BRIDGES) 689
Dye:
Accumulation in *Nitella* (IRWIN) 147

E

Earth:
Alkali elements, transport numbers of casein compounds with (GREENBERG and SCHMIDT) 271
Egg:
Albumin, ionization, influence of salts (SØRENSEN, LINDERSTRØM-LANG, and LUND) 543
Starfish, activation by acids (LILLIE) 339
Electrolyte:
Distribution between transudates and serum (HASTINGS, SALVESEN, SENDROY, and VAN SLYKE) 701
Electrophoretic migration of bacteria, influence on, of (WINSLOW and FLEESON) 195
— — — yeast cells, influence on, of (WINSLOW and FLEESON) 195
Equilibria of gas and, in blood. IX (HASTINGS, SALVESEN, SENDROY, and VAN SLYKE) 701
Membrane permeability (MICHAELIS) 33
Electrophoresis:
Bacterium, electrophoretic migration, influence of electrolytes (WINSLOW and FLEESON) 195
Electrophoresis—*continued:*
Yeast cell, electrophoretic migration, influence of electrolytes (WINSLOW and FLEESON) 195
Encephalitis:
Epidemic, and simple herpes (FLEXNER) 713
Enzyme:
Action. XXXIII (FALK, NOYES, and SUGIURA) 75
Epidemiology:
Encephalitis, and simple herpes (FLEXNER) 713
Equilibrium:
Gas and electrolyte, in blood. IX (HASTINGS, SALVESEN, SENDROY, and VAN SLYKE) 701
Eucharis:
multicornis, photolysis of luminescent granules (MOORE) 303
Excretion:
Carbon dioxide, by frog nerve (PARKER) 21
Eye:
Muscle, individual, relation of individual ampullæ of semicircular canals. I (MAXWELL and HUDDLESTON) 441

F

Fermentation:
Ion antagonism and (HÖBER and SCHÜRMEYER) 265
Frog:
Nerve, carbon dioxide excretion (PARKER) 21
Parthenogenetic, chromosomes (PARMENTER) 1

G

Gelatin:
Osmotic pressure in salt solutions (NORTHROP and KUNITZ) 317

Gelatin—*continued:*
Swelling in salt solutions (NORTHROP and KUNITZ) 317
Geotropism:
Helix, muscle tension and (COLE) 253
Growth:
Animals, genetic constants (BRODY) 233
Mouse, normal white, analysis into constituent processes (ROBERTSON) 463
Seedling, influence of alcohol (PEARL and ALLEN) 215
Time relations. I (BRODY) 233

H

Helix:
Geotropism (COLE) 253
Muscle tension (COLE) 253
Herpes:
Simple, and epidemic encephalitis (FLEXNER) 713
Humor:
Animal reactions, humoral influence (SHARPEY-SCHAFER) 645
Hydrolysis:
Albumin, peptic, influence of backward reaction (MORRELL, BORSOOK, and WASTENEYS) 601

I

Ion:
Antagonism, fermentation and (HÖBER and SCHÜRMEYER) 265
Casein compounds formed with alkali, ionization. IV (GREENBERG and SCHMIDT) 271
Ion—*continued:*
Egg albumin, ionization, influence of salts (SØRENSEN, LINDERSTRØM-LANG, and LUND) 543
Oxyhemoglobin solutions, activity coefficients (COHN and PRENTISS) 619
Protoplasm, living, permeability to (OSTERHOUT) 131

K

Ketopiperazine:
Alkali, action of, on (LEVENE and PFALTZ) 183

L

Light:
Orientation of animals by opposed beams (CROZIER) 671
Reaction of *Cerianthus* (MOORE) 509
Lipase:
Actions of extracts of whole rat at different ages (FALK, NOYES, and SUGIURA) 75
Loeb:
Bibliography (KOBELT) lxi
Biographical sketch (OSTERHOUT) ix
Luminescence:
Bacteria, luminous, total luminous efficiency (HARVEY) 89
Eucharis multicornis, photolysis of luminescent granules (MOORE) 303

M

Magnesium chloride:
Protoplasm of *Amœba proteus*, action on, of (CHAMBERS and REZNIKOFF) 369

Mammal:
Tissue, potential immortality (LOEB) 417
—, transplantation (LOEB) 417
Matter:
Living, molecular orientation (HARDY) 641
Membrane:
Collodion, protein films on (HITCHCOCK) 61
Permeability for electrolytes (MICHAELIS) 33
Metabolism:
Carbohydrate, aerobic (MEYERHOF) 531
—, anaerobic (MEYERHOF) 531
Cell, malignant (MURPHY and HAWKINS) 115
—, normal (MURPHY and HAWKINS) 115
Tumors, in body (WARBURG, WIND, and NEGELEIN) 519
Micrurgy:
Cell physiology, micrurgical studies. I (CHAMBERS and REZNIKOFF) 369
Mouse:
Growth, analysis into constituent processes (ROBERTSON) 463
Muscle:
Eye, individual, relation of individual ampullæ of semicircular canals. I (MAXWELL and HUDDLESTON) 441
Helix, tension, geotropism and (COLE) 253

N

Nerve:
Animal reactions, neural influence (SHARPEY-SCHAFER) 645
Frog, carbon dioxide excretion (PARKER) 21
Nitella:
Accumulation of dye (IRWIN) 147

O

Œnothera:
Androlethal factors (DE VRIES) 109
Orientation:
Animal, by opposed beams of light (CROZIER) 671
Molecular, in living matter (HARDY) 641
Osmosis:
Pressure, osmotic, of gelatin in salt solutions (NORTHROP and KUNITZ) 317
Oxyhemoglobin:
Solutions, activity coefficients of ions (COHN and PRENTISS) 619

P

Parthenogenesis:
Chromosomes of parthenogenetic frogs (PARMENTER) 1
— — — tadpoles (PARMENTER) 1
Pepsin:
Hydrolysis, of albumin, influence of backward reaction (MORRELL, BORSOOK, and WASTENEYS) 601
Peptide:
Alkali, action of, on (LEVENE and PFALTZ) 183
Permeability:
Membrane, for electrolytes (MICHAELIS) 33
Protoplasm, living, permeability to ions (OSTERHOUT) 131
Photolysis:
Eucharis multicornis, luminescent granules (MOORE) 303

Photosensory:
Ciona, process, effect of exposure period (HECHT) 291
—, —, — — temperature (HECHT) 291

Physics:
Chemistry, physical, of proteins. VI (COHN and PRENTISS) 619

Physiology:
Cell, micrurgical studies. I (CHAMBERS and REZNIKOFF) 369
Self-sterility in plants (EAST) 403

Plant:
Self-sterility, physiology (EAST) 403

Potassium chloride:
Protoplasm of *Amœba proteus*, action on, of (CHAMBERS and REZNIKOFF) 369

Pressure:
Osmotic, of gelatin in salt solutions (NORTHROP and KUNITZ) 317

Protein:
Chemistry, physical. VI (COHN and PRENTISS) 619
Film, on collodion membrane (HITCHCOCK) 61
Solution, pure, effect on diffusibility of calcium (LOEB) 451

Protoplasm:
Amœba proteus, action of chlorides of sodium, potassium, calcium, and magnesium (CHAMBERS and REZNIKOFF) 369
Living, permeability to ions (OSTERHOUT) 131

R

Rat:
Extract, lipase actions at different ages (FALK, NOYES, and SUGIURA) 75

Reaction:
Animal, humoral influence (SHARPEY-SCHAFER) 645
—, neural influence (SHARPEY-SCHAFER) 645
Backward, influence in peptic hydrolysis of albumin (MORRELL, BORSOOK, and WASTENEYS) 601
Cerianthus, to light (MOORE) 509

Respiration:
Shark (LYON) 279

S

Salt(s):
Ionization of egg albumin, influence on, of (SØRENSEN, LINDERSTRØM-LANG, and LUND) 543
Solution, osmotic pressure of gelatin in (NORTHROP and KUNITZ) 317
—, swelling of gelatin in (NORTHROP and KUNITZ) 317

Seedling:
Growth, influence of alcohol (PEARL and ALLEN) 215

Serum:
Blood, effect on diffusibility of calcium (LOEB) 451
Electrolytes, distribution between transudates and (HASTINGS, SALVESEN, SENDROY, and VAN SLYKE) 701

Shark:
Blood pressure (LYON) 279

Shark—*continued:*
Circulation (LYON) 279
Respiration (LYON) 279
Sodium chloride:
Protoplasm of *Amœba proteus*, action on, of (CHAMBERS and REZNIKOFF) 369
Solution:
Oxyhemoglobin, activity coefficients of ions (COHN and PRENTISS) 619
Protein, pure, effect on diffusibility of calcium (LOEB) 451
Salt, osmotic pressure of gelatin in (NORTHROP and KUNITZ) 317
—, swelling of gelatin in (NORTHROP and KUNITZ) 317
Starfish:
Egg, activation by acids (LILLIE) 339
Sterility:
Plant, physiology of self-sterility (EAST) 403
Swelling:
Gelatin in salt solutions (NORTHROP and KUNITZ) 317

T

Tadpole:
Parthenogenetic, chromosomes (PARMENTER) 1
Temperature:
Ciona, photosensory process, effect on, of (HECHT) 291
Tissue:
Mammalian, potential immortality (LOEB) 417
—, transplantation (LOEB) 417
Toxin:
Diphtheria, nature (DERNBY) 311
Transplantation:
Tissue, mammalian, and potential immortality (LOEB) 417
Transudate:
Electrolytes, distribution between serum and (HASTINGS, SALVESEN, SENDROY, and VAN SLYKE) 701
Tumor:
Metabolism, in body (WARBURG, WIND, and NEGELEIN) 519

V

Vision:
Peripheral, theory of quanta (LASAREFF) 189

Y

Yeast:
Cell, electrophoretic migration, influence of electrolytes (WINSLOW and FLEESON) 195